

REMARKS

Claims 1, 3-6, 8-23, 30-36 and 43 are pending and rejected in this application. Claims 1, 9, 11, 14, 30, 34 and 36 are amended; and claim 43 is cancelled hereby.

Responsive to the rejection of claims 1, 3-6, 8-23, 30-36 and 43 under 35 U.S.C. § 112, first paragraph, Applicants have amended claims 1, 9, 11, 14, 30, 34 and 36; and cancelled claim 43; and submit that claims 1, 3-6, 8-23 and 30-36 are now in condition for allowance. Applicants amended the claims to remove the matter to which the Examiner relied upon for this rejection. Even though the Applicants have amended the claims to remove such information, Applicants contend that the figures of the application, as originally submitted, do support the construct previously claimed. Applicants submit that the claims, as amended, do convey to one skilled in the art the ability to make and use the invention. Accordingly, Applicants submit that claims 1, 3-6, 8-23 and 30-36 are now in condition for allowance, which is hereby respectfully requested.

Responsive to the Examiner's rejection of claims 1, 3-6, 8-23, 30-36 and 43 under 35 U.S.C. § 112, second paragraph, Applicants have amended claims 1, 9, 11, 14, 30, 34 and 36; and cancelled claim 43. For the reasons previously submitted Applicants contend that the claims prior to the instant amendment were supported by the specification. Nonetheless, Applicants have amended the claims to remove the material relied upon by the Examiner and now submit that claims 1, 3-6, 8-23 and 30-36 are now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3-8 and 43 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 5,364,335 (Franzen, et al.), Applicants have amended claim 1 and cancelled claim 43, and submit that claims 1, and claims 3-8 depending therefrom, are now in condition for allowance.

Franzen, et al. disclose a disc-decanter centrifuge 1 (Fig. 1) supported by a support structure 2 and including a free translating pendular drive system 4, bowl assembly 6 and back drive assembly 8. Drive system 4 includes motors 10a, 10b capable of generating rotational speeds of at least 6,000 rpm (column 2, lines 45-56). Drive system 4 rotates shaft 5 which in turn causes bowl 56, disc carrier 64 (Fig. 2) and discs 66 to rotate at the same rotational speed (column 3, line 68 through column 4, line 2). Bowl assembly 6 includes bowl 56, cylindrical screw conveyor 65, disc carrier 64, circular discs 66, distributor 62, accelerator 73 and conically shaped screw conveyor 71 (column 4, lines 41-44). Overflow passage 76 is formed in end 58 of bowl 56. Bore 60 is coaxially aligned with shaft 5 and receives feed pipe 50 (Fig. 3; column 4, lines 63-66). Discs 66 cooperate with the centrifugal force created by the rotation of bowl 56 so as to incrementally separate the solids from the liquid slurry. As the slurry moves inward along discs 66, the solids collect on the underside of discs 66 (column 7, lines 15-20).

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Franzen et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Franzen et al. disclose a disc-decanter centrifuge having discs arranged about an axis of rotation. In contrast, the present invention includes a filter media that is arranged in a spiral type arrangement, which is unlike the angled disc of Franzen et al. Solids in Franzen et al. move outward underneath a side of disc 66 and through openings 110. While Franzen et al. has a series of discs arranged along the axis of rotation, the present invention has a plurality of surfaces arranged in a radially outward manner from the axis of rotation. Therefore, Franzen et al. and any

of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media being spirally arranged about the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

Responsive to the Examiner's rejection of claims 1, 3-6, 8-10 and 36 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 4,891,041 (Hohmann, et al.), Applicants have amended claims 1, 9 and 36, and submit that claims 1, 3-6, 8-10 and 36 are now in condition for allowance.

Hohmann, et al. disclose a separating device 100 (Fig. 1) including an upper housing part 1 and a lower housing part 13. A drive motor 2 has a vertical drive shaft 3 and is secured to an upper surface of upper housing part 1. Drive shaft 3 has two shaft sections 3a and 3b. A dynamically balanced collecting vessel 5, which serves as a container for the centrifuge, is torsionally connected but axially detachable from a lower shaft section 3b (column 3, lines 5-18). Lower housing part 13 is connected to upper housing part 1 by threaded fasteners, which engage annular flange 13a (column 3, lines 34-36). Upper housing part 1 has an admission channel 18 via which liquid enriched with solid particles can enter into an annular distribution space 19 with

a pipe-shaped nozzle 20 (column 3, lines 44-50). Collecting vessel 5 has transversely extending partitions 21, which form chambers 22 that are connected to opening 24 and to one another by openings 23. A liquid introduced into admission channel 18 and nozzle 20 flows into outlet channel 25 via opening 24 (column 3, lines 55-67). Partitions 21 and chambers 22 intercept the entrained solid particles as they are pressed against outer wall 27 by centrifugal forces during rotation of container 5 (column 4, lines 4-9). The start-up time of motor 2 until the nominal speed is reached is measured with a light barrier arrangement 28 (column 4, lines 39-43). Container 5 is not a filter media.

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Hohmann, et al. or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Hohmann, et al. disclose a separating device including a dynamically balanced collecting vessel 5 which is not a filter media. Hohmann, et al. has transversally extending partitions in collecting vessel 5, which form chambers that are connected to openings which are interconnected. Partitions and chambers intercept in trained solid particles as they are pressed against an outer wall by centrifugal force by the rotation of container 5. In contrast, the present invention utilizes a spirally would filter media for the entrapment of particles. Therefore, Hohmann, et al. and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 9, as amended, recites in part:

filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Hohmann, et al. or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Hohmann, et al. disclose a separating device including a dynamically balanced collecting vessel 5 which is not a filter media. Hohmann, et al. has transversally extending partitions in collecting vessel 5, which form chambers that are connected to openings which are interconnected. Partitions and chambers intercept in trained solid particles as they are pressed against an outer wall by centrifugal force by the rotation of container 5. In contrast, the present invention utilizes a spirally wound filter media for the entrapment of particles. Therefore, Hohmann, et al. and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about the axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 9, and claim 10 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 36, as amended, recites in part:

filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Hohmann, et al. or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Hohmann, et al. disclose a separating device including a dynamically balanced collecting vessel 5 which is not a filter media. Hohmann, et al. has transversally extending partitions in collecting vessel 5, which form chambers that are connected to openings which are interconnected. Partitions and chambers intercept in trained solid particles as they are pressed against an outer wall by centrifugal force by the rotation of container 5. In contrast, the present invention utilizes a spirally wound filter media for the entrapment of particles. Therefore, Hohmann, et al. and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the Examiner's rejection of claims 1, 3-6, 8, 11 and 36 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 4,353,499 (Simonds), Applicants have amended claims 1, 11 and 36, and submit that claims 1, 3-6, 8, 11 and 36 are now in condition for allowance.

Simonds discloses a centrifugal separator (Fig. 1) including centrifuge 42 driven by an electric motor having a drive shaft 54 attached to centrifuge 42 (column 2, lines 52-66). A multi-chamber separator assembly 58 is disposed within housing 44 and includes a first annular disc or plate member 60 having an outer periphery thereof supported by an inwardly directed annular shoulder 62 provided on the inner periphery of sleeve 46. Plate 60 is spaced from bottom plate 44 to provide a fluid chamber 61 therebetween. An upstanding circular flange 66 is provided on the inner face of plate 60 and is spaced slightly inboard of the outer periphery thereof as shown in Fig. 1 for supporting the outer periphery of a second annular disc 68 thereon. Inner periphery of plate 68 tightly engages outer periphery of sleeve 70, which is concentrically arranged around the outer periphery of hub 50. The outer diameter of disc 68 is slightly smaller than the outer diameter of disc 60 and an upstanding circular flange 76 extends outwardly from the inner face

thereof for supporting the inner periphery of a third annular disc 78 (column 3, lines 9-34).

In contrast, claim 1, as amended recites in part:

filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. In contrast, the present invention includes a spirally wrapped filter media for the entrapment of particles in the oil. Therefore, Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest any filter media being spirally arranged about an axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 11, as amended recites in part:

a filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. In contrast, the present invention includes a spirally wrapped filter media for the entrapment of particles in the oil. Therefore, Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation, as recited in claim 11.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 11 is now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 36, as amended recites in part:

a filter media ... being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. In contrast, the present invention includes a spirally wrapped filter

media for the entrapment of particles in the oil. Therefore, Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the Examiner's rejection of claims 9, 10, 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Simonds in view of U.S. Patent No. 5,656,164 (Vado, et al.), Applicants have amended claims 9 and 11, and submit that claims 9, 10, 12 and 13 are now in condition for allowance.

Vado et al. discloses a compact apparatus for centrifugal separation including a housing 2 and a motor 3 (Figs. 1 and 2). There are channels 12 in housing 2 which allow the entrance of a liquid that is to be centrifuged. The liquid, such as engine fuel oil, along with its impurities and water, enters through channels 12 and goes into cartridge 9, which is rotating with shaft 6 of motor 3. The heavier liquid, which is the water, remains within the cartridge, while the lighter liquid, the fuel oil, passes through channels 7 and 8 to be sent to the boat engine. Filter 11 eliminates solid impurities (column 2, line 41 through column 3, line 5).

In contrast, claim 9, as amended, recites in part:

filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Simonds, Vado et al. or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. Vado et al. discloses a compact apparatus for centrifugal separation including a housing that contains the heavier liquid, which is the water, while the lighter liquid, the fuel oil, passes through channels to be sent to the boat engine. In contrast, the present invention includes a spirally wrapped filter media for the entrapment of particles in the oil. Therefore, Simonds, Vado et al. and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 9, and claim 10 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

Claims 12 and 13 depend from claim 11, and claim 11 has been placed in condition for allowance for the reasons given herein. Accordingly, Applicants submit that claims 12 and 13 are now in condition for allowance, which is hereby respectively requested.

Responsive to the Examiner's rejection of claims 1, 3-6, 8-23 and 30-36 under 35 U.S.C. § 103 (a) as being unpatentable over U.S. Patent No. 5,904,841 (Penny) in view of Vado, et al. and Simonds, Applicants have amended claims 1, 9, 11, 14, 30, 34 and 36, and submit that claims 1, 3-6, 8-23 and 30-36 are now in condition for allowance.

Penny discloses a fluid circulation centrifugal cleaner with pressure regulator (Figs. 1(a) and 2(a)) including a base 11, a rotor 12 and a housing 14. Rotor 12 is mounted on a substantially vertical axis 13 for rotation thereabout. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Supply fluid is forced outwardly by rapid rotation of rotor 12 due to the reaction of the ejection of the supply fluid to sump 15 by way of rotor nozzles 18 and 19 in the base thereof (column 1, lines 23-38).

In contrast, claim 1, as amended recites in part:

filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado, et al. and Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator. Fluid is supplied at an elevated pressure to the interior of the rotor and the supply fluid is forced outwardly by rapid rotation of the rotor. Vado et al. discloses a compact apparatus for centrifugal separation including a housing that contains the heavier liquid, which is the water, while the lighter liquid, the fuel oil, passes through channels to be sent to the boat engine. Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. However,

Penny, Vado, et al. and Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 9, as amended recites in part:

filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado, et al. and Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator. Fluid is supplied at an elevated pressure to the interior of the rotor and the supply fluid is forced outwardly by rapid rotation of the rotor. Vado et al. discloses a compact apparatus for centrifugal separation including a housing that contains the heavier liquid, which is the water, while the lighter liquid, the fuel oil, passes through channels to be sent to the boat engine. Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. However, Penny, Vado, et al. and Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 9, and claim 10, depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 11, as amended recites in part:

a filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado, et al. and Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator. Fluid is supplied at an elevated pressure to the interior of the rotor and the supply fluid is forced outwardly by rapid rotation of the rotor. Vado et al. discloses a compact apparatus for centrifugal separation including a housing that contains the heavier liquid, which is the water, while the lighter liquid, the fuel oil, passes through channels to be sent to the boat engine. Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. However, Penny, Vado, et al. and Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing

the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 11, and claims 12 and 13, depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 14, as amended recites in part:

a filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado, et al. and Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator. Fluid is supplied at an elevated pressure to the interior of the rotor and the supply fluid is forced outwardly by rapid rotation of the rotor. Vado et al. discloses a compact apparatus for centrifugal separation including a housing that contains the heavier liquid, which is the water, while the lighter liquid, the fuel oil, passes through channels to be sent to the boat engine. Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. However, Penny, Vado, et al. and Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of

the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 14, and claims 15-23, depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In additional contrast, claim 30, as amended recites in part:

a filter media disposed within said filter, said filter media being spirally arranged about said axis;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado, et al. and Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator. Fluid is supplied at an elevated pressure to the interior of the rotor and the supply fluid is forced outwardly by rapid rotation of the rotor. Vado et al. discloses a compact apparatus for centrifugal separation including a housing that contains the heavier liquid, which is the water, while the lighter liquid, the fuel oil, passes through channels to be sent to the boat engine. Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. However, Penny, Vado, et al. and Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing

reasons, Applicants submit that claim 30, and claims 31-33, depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet additional contrast, claim 34, as amended recites in part:

a filter media disposed within said filter, said filter media being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado, et al. and Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator. Fluid is supplied at an elevated pressure to the interior of the rotor and the supply fluid is forced outwardly by rapid rotation of the rotor. Vado et al. discloses a compact apparatus for centrifugal separation including a housing that contains the heavier liquid, which is the water, while the lighter liquid, the fuel oil, passes through channels to be sent to the boat engine. Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. However, Penny, Vado, et al. and Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 34, and claim 35, depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 36, as amended, recites in part:

a filter media ... being spirally arranged about said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado, et al. and Simonds or any of the other cited references, alone or in combination, and include distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator. Fluid is supplied at an elevated pressure to the interior of the rotor and the supply fluid is forced outwardly by rapid rotation of the rotor. Vado et al. discloses a compact apparatus for centrifugal separation including a housing that contains the heavier liquid, which is the water, while the lighter liquid, the fuel oil, passes through channels to be sent to the boat engine. Simonds discloses a centrifugal separator having separate chambers separated in an axial direction from each other. However, Penny, Vado, et al. and Simonds and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a filter media being spirally arranged about an axis of rotation.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36, is now in condition for allowance, which is hereby respectfully requested.

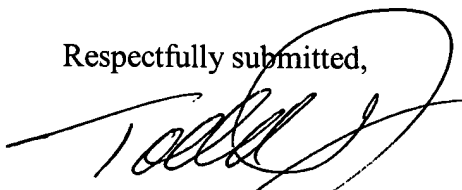
For the foregoing reasons, Applicants submit that the pending claims are definite and do particularly point out and distinctly claim the subject matter which Applicants regard as the

invention. Moreover, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,



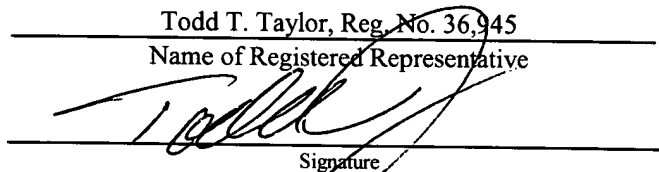
Todd T. Taylor
Registration No. 36,945

Attorney for Applicant

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Todd T. Taylor, Reg. No. 36,945
Name of Registered Representative



Signature

April 20, 2004
Date

TTT6/ge

TAYLOR & AUST, P.C.
142 S. Main Street
P.O. Box 560
Avilla, IN 46710
Telephone: 260-897-3400
Facsimile: 260-897-9300

Enc.: Return postcard